

**COGNITIVE STRATEGIES OF TURKISH EFL UNIVERSITY STUDENTS  
DURING SENTENCE - COMBINING TASKS**

**A THESIS  
SUBMITTED TO THE INSTITUTE OF HUMANITIES AND LETTERS  
OF BILKENT UNIVERSITY  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF MASTER OF ARTS  
IN THE TEACHING OF ENGLISH AS A FOREIGN LANGUAGE**

**BY**

**ŞÜKRAN ÖZOĞLU  
AUGUST 1994**

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## ABSTRACT

Title: Cognitive strategies of Turkish EFL university students during sentence-combining tasks

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This case study was designed to examine the cognitive strategies Turkish EFL students use during sentence-combining tasks in order to have a better understanding of what skills are required to produce a syntactically mature text. Six students studying at an English-medium university in Turkey participated in the study.

In order to examine the cognitive strategies, think-aloud protocols of six subjects were audio-taped and transcribed. The transcriptions of the protocols were then segmented into communication units which were identified in a coding system developed by Johnson (1992).

The results of the study showed that Turkish EFL students were most frequently engaged in the strategies of Higher-Level Planning ( $\bar{M} = 10.08$ ,  $\underline{SD} = 4.45$ ), Restating Content 2 ( $\bar{M} = 7.59$ ,  $\underline{SD} = 2.63$ ), Constructing Meaning 1 ( $\bar{M} = 7.17$ ,  $\underline{SD} = 2.69$ ) and Restating Content 1 ( $\bar{M} = 6.67$ ,  $\underline{SD} = 1.63$ ). This illustrates that the students spent most of their time trying to comprehend the given sentences in order to be able to produce their own texts.

An attempt was also made to investigate whether the topic of a text dictated the cognitive strategies used during sentence-combining tasks. Topic 1 dealt with comparing a bicycle and a car and Topic 2 was a

semiscientific subject about sound. The subjects were asked to manipulate the sentences of these topics to form cohesive paragraphs. The results showed that there was not a very distinct difference in the cognitive strategies used by the subjects with respect to familiarity of the topic. Nevertheless, it was indicated that the subjects used the strategies of Restating Content 1 ( $\bar{M} = 8.67$ ,  $\underline{SD} = 1.63$ ), which involved reading the text, and Constructing Meaning 1 ( $\bar{M} = 8.50$ ,  $\underline{SD} = 2.69$ ), which involved understanding the ideas in the text, more frequently with Topic 2 than they did with Topic 1.

The relationship between the cognitive strategies and the language proficiency levels of the subjects was also investigated. The results did not show a clear-cut trend. It was observed that the subjects with different language proficiency scores exhibited mostly the same type of strategies during sentence-combining tasks. The only difference observed was that the subject with the lowest language proficiency score (60.0) used the strategies of Lower-Level Questioning ( $\bar{M} = 3.0$ ) and Evaluation ( $\bar{M} = 4.5$ ) much more frequently than the subjects with higher language proficiency.

The study also aimed at examining the relationship between the cognitive strategies of ESL students studying at an American university in Johnson's (1992) study and EFL students in Turkey. In both of the studies, the results illustrated that ESL and EFL student writers most frequently use the strategies of Restating Content, Constructing Meaning and Higher-Level Planning during the same type of sentence-combining tasks.

BILKENT UNIVERSITY  
INSTITUTE OF HUMANITIES AND LETTERS  
MA THESIS EXAMINATION RESULT FORM

August 31, 1994

The examining committee appointed by the  
Institute of Humanities and Letters for the  
thesis examination of the MA TEFL student

Şükran Özoğlu

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has read the thesis of the student.  
The committee has decided that the thesis  
of the student is satisfactory.

Thesis Title : Cognitive strategies  
of Turkish EFL university students  
during sentence combining tasks

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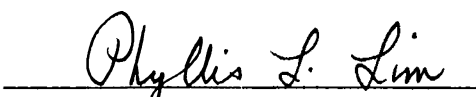
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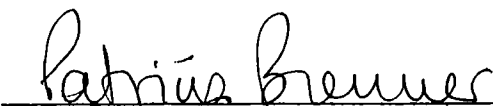
We certify that we have read this thesis and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts.



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## CHAPTER 1 INTRODUCTION

### Background of the Study

It has been a common goal among teachers to search for new methods to improve the writing skills of students at Turkish universities because school-sponsored writing appears to be a very difficult skill for them to acquire. Turkish university students at an English-medium university do not prioritize the development of writing skills because they believe that they must first improve their reading and listening comprehension (Bear, 1985). Therefore, teachers have always had to place a great deal of emphasis on developing instructional methods that aim at improving students' writing abilities. However, because teachers are generally trained in Turkey, where they have been taught to focus on students' written products, the methods for teaching writing emphasize the avoidance of errors and adherence to the rules of syntax. It is, therefore, important to first examine the approaches and techniques in writing instruction in general and the demands that they make on students. The researcher believes that a brief survey of the history of second and foreign language writing methodology will be helpful in evaluating different approaches and techniques that have prevailed during the last three decades.

There have been changes in the approaches to the teaching of writing as researchers and teachers have looked for better methods to improve student writing.

First, there was the traditional approach which was dominant in the 1960s and early 1970s and mainly used activities in the form of sentence drills, fill-ins, substitutions, transformations, and completions in order to teach grammatical rules. In this approach, not only was the grammatical form emphasized but also the rhetorical form (Kroll, 1991).

This traditional approach, which viewed writing as reinforcement of language principles through imitating models, received a great deal of criticism because it was thought to give rise to artificial products that no native speaker would ever produce (Watson-Reekie, 1984). Tightly controlled writing tasks found in the traditional approach then gave way to the process-centered approach, which focused on writing processes of the learners, and, consequently, a learner-centered classroom was recommended.

After the 1970s, the emphasis on the language learner led to the learner-centered approach in the teaching of writing. In this approach, writing was thought to be related to what the writer does instead of what the final product looks like. Learners were observed in the process of writing and were expected to discover the model for themselves (Connor, 1987; Kroll, 1991). Communicative achievement rather than correctness of the products was stressed. The learner-centered approach has received a great deal of support from process-oriented writing research. The research shows that the process approach in writing encourages

experimentation with ideas while writing. It also reflects the path that the students follow to get to the product (Raimes, 1991).

As process research developed rapidly, some researchers pointed out the relationship between process and product research and purported that an integrated theory of process and product should be considered (Connor, 1987). Research findings of the process approach also showed the importance of products. Raimes (1985), in her analyses of unskilled second language learners' writing processes, recommended that teachers attend to products as well as processes in teaching writing. This way of viewing writing has been accepted by many teachers and text book writers also (Leki, 1991).

Nevertheless, the process approach was not accepted very enthusiastically by some researchers because it was found to be inappropriate for the requirements of academic studies. The critics observed that emphasis on multiple drafts (required by the process approach) did not actually prepare the students for essay examinations or for their academic tasks (Horowitz, 1986b). Some researchers, therefore, shifted their focus from the processes of the writers to the demands of the academic environment (Raimes, 1991). Thus, a new approach was introduced, the content-based approach, in which students were expected to focus on rhetorical organizations of technical academic writing, content

specific language, and the tasks that they would expect to encounter in their academic careers. Within the content-based approach, sentence-combining tasks received a great deal of attention. They were carefully re-evaluated as these tasks were expected to prepare university students for the essential characteristics of academic writing assignments (Horowitz, 1986a).

Sentence-combining, which focused on manipulation of given sentences, was said to give students a chance to explore available syntactic options (O'Hare, cited in Raimes, 1991). Due to the fact that direct grammar teaching was abandoned because it was not accepted as being helpful in improving the quality of writing, sentence-combining was accepted as a technique in the transfer of lexical items and patterns into a written text with little effort on the part of the students. With sentence-combining tasks, students were able to see what linked sentences together, and therefore, they were likely to become more conscious of syntactic cohesive devices in sentences (Strong, 1986).

Sentence-combining as an instructional technique has been used in different formats in the field of second language writing and has received much attention from researchers and teachers because of its controversial nature. Research findings in experimental studies of Combs, Daiker et al., Mellon and O'Hare (cited in Strong, 1986 and Zamel, 1980) all pointed to the gains made by students engaged in sentence-combining practice and showed the positive effect it seems to have



on syntactic maturity and even on overall writing quality. However, Zamel (1980), in discussing the effectiveness of sentence-combining, cautions against any generalizations to the effect that it is a better technique than others since sentence-combining ability and overall quality of writing may operate together, and one may not be the cause of the other.

Other researchers, like Klein and Elbow (cited in Strong, 1986), have voiced reservations about sentence-combining. They claim that although it may help certain aspects of writing, sentence-combining should play a minimal role in writing classes because it does not reflect the real process of writing. Along this line, another important remark comes from Zamel (1980) in her re-evaluation of sentence-combining. She states that a psycholinguistic model of the writing process explains that sentence-combining practice does not necessarily improve the grammatical competence but may help the students to make use of syntactic rules in the input they receive.

Despite these reservations, Zamel (1980), finds sentence-combining practice one of the best ways to help students learn about the grammar of sentences. She, however, cautions that sentence-combining helps only the syntactic aspect of the composing process and that it can not be used as a method to develop rhetorical skills because it ignores the complexity of the writing process which involves pre-writing, organizing, developing, and revising. Horowitz (1986b), considering the demands of

academic writing, finds sentence-level practice useful because it makes students aware of discourse markers and helps them to organize and present data in academic reports.

Johnson (1992), another researcher who is interested in the effects of sentence-combining, argues that despite very little empirical evidence or theoretical support, sentence combining has continued to be widely used as an instructional tool in second language writing. She also points out that most supporters of the sentence-combining technique contend that real writing and sentence-combining require different cognitive and linguistic processes. Whereas the former requires the writer to create an idea and manipulate sentence structures, the latter gives the writer something to say and invites choices about the best way to say it. Due to the controversial nature of sentence-combining tasks, Johnson explored the cognitive strategies that second language writers engaged in during sentence-combining tasks in order to gain more insights into the role that these tasks play in the development of writing skill. Her study found that second language learners most frequently engaged in restating content, constructing meaning, and planning as they completed sentence-combining tasks. The present study investigated whether these findings would be the same in an EFL situation.

### Statement of Purpose

Students of English as a foreign language at Middle East Technical University (METU) have very poor writing skills both in their academic content courses and in English as a foreign language (EFL) classes. To help students improve their writing skills for their academic studies, certain instructional techniques have been put into practice. Sentence-combining has been one of the most widely used techniques since most of the text books (e.g., Smalley & Hank, 1982) used at the university include sentence-combining as an instructional alternative. However, students continue to perform at suboptimal levels with respect to their writing quality. A study of sentence-combining technique may help teachers to better understand the cognitive demands this technique makes on students.

Most of the studies on sentence-combining have been carried out in English as a second language (ESL) settings, but very little has been done in foreign language teaching (McKee, 1982). Raimes (1991) states that EFL and ESL situations are very different with respect to the amount and quality of input that students receive. For some international students studying at American universities a content-based approach to the teaching of writing might be appropriate, yet other students at American universities might need other instructional approaches. Thus, Raimes suggests that teachers recognize the diversity of their students,

realizing that not all approaches and techniques might be applicable to all ESL/EFL students.

The researcher believes that the best way to help students to improve their writing is to observe and try to understand the cognitive processes they exhibit during writing. As Raimes (1991) mentions, classroom research is helpful for the teachers to evaluate students' needs more objectively. It is hoped that observing students' efforts and struggles while performing writing tasks will be beneficial in finding the most appropriate and applicable instructional procedures for students.

In light of the above discussion and considering all the positive gains of sentence-combining pointed out in the research, the researcher aimed at examining sentence-combining as a technique for improving students' writing. The researcher believed that because the amount and the quality of input are different in EFL and ESL situations (Raimes, 1991), a study of sentence-combining in a Turkish situation (an EFL situation) might shed more light on the cognitive strategies involved in sentence-combining due to the fact that most studies on sentence-combining were carried out in ESL situations (Johnson, 1992).

An EFL situation at an English-medium university in Turkey presents a different set of parameters from an ESL situation. In an EFL situation the common native language is used to explain incomprehensible issues by both the teachers and the students, who are all Turkish

speakers. These EFL students are not frequently exposed to the target language outside of the classroom. There is very little motivation to read widely in order to increase knowledge of syntactic accuracy and rhetorical organization in English because students can have ideas clarified in their native language. Thus, the lack of an enriched repertoire of linguistic structures and stylistic expressions may influence the cognitive strategies that Turkish EFL students exhibit in sentence-combining tasks. This study, which will be a replication of Johnson's (1992) study, aimed to investigate cognitive strategies that EFL writers exhibit during sentence-combining tasks as well as the skills that might be required to complete these tasks.

Although the present study was a replication of Johnson's (1992) study, which was designed to explore the cognitive demands of sentence-combining by examining the cognitive strategies of advanced ESL learners studying at an American university, it was thought to be different in that EFL students at METU were the subjects of study. These students were different from those in Johnson's study because they were only studying the target language to be able to carry out their academic studies and to write in this target language in their content courses. Johnson's subjects, on the other hand, were in an ESL setting where the target language was spoken in the immediate environment of the learner and where the subjects also had the opportunity to use the language in natural communicative situations.

Swain (1985) also points out that comprehensible input can contribute differentially to second language (L2) acquisition depending on the amount and the quality of that input, which, in turn, is regulated by being in an EFL or ESL situation. Although learners in an EFL setting may have adequate input, because they are not forced to use the target language to convey their intended messages outside the classroom for their common native language easily provides this, their processes of transferring input into intake may be quite different from those of the students in an ESL setting who commonly use the target language. In other words, EFL students here in Turkey have little or no opportunity to use the target language in natural communication situations which is quite different from a second language acquisition situation where the target language is spoken in the immediate environment of the learner (Ringbom, 1980). It would be, therefore, interesting to compare the cognitive strategies of Turkish EFL students during sentence-combining tasks with those of Johnson's ESL subjects.

#### Research Questions

Based on the foregoing discussion, this process-oriented study aimed to examine the cognitive strategies of EFL students during sentence-combining tasks in order to have a better understanding of what skills are required to produce a syntactically mature text. The study examined EFL students at different proficiency

levels determined by a proficiency test in order to compare them with one another and also to compare their writing strategies with those of the advanced ESL student writers in Johnson's (1992) study. It was hoped that knowing more about these strategies and the processing constraints involved, would help Turkish teachers to better assess the appropriateness of their teaching approaches and techniques.

This study addressed the following questions:

1. What cognitive strategies do Turkish EFL students use when performing sentence-combining tasks?
2. Are there differences in the students' cognitive strategies with respect to topic familiarity? If so, what are these differences?
3. Are there differences in the cognitive strategies of EFL students with different language proficiency levels? If so, what are these differences?
4. What are the differences between the cognitive strategies of ESL students and EFL students?

## CHAPTER 2 REVIEW OF THE LITERATURE

### Introduction

Recent studies in writing instruction have aimed at helping teachers to better understand the writing process and therefore make very judicious choices in the methods that they use. As pointed out by Zamel (1987), there is a great need for teachers to become researchers themselves and to investigate the relationship between teaching and writing development in their own classrooms. In this way, she states, they can learn from their own students what they still need to be taught. It is also the researcher's belief that by following the research in the field of writing, teachers will become familiar with the different approaches and techniques used and, consequently, will be able to adopt suitable approaches to meet their students' specific writing needs. Hence, a brief history of the evolution of writing instruction during the past twenty-five years is reviewed in the following sections. In addition, because sentence-combining, a technique used in almost all approaches to the teaching of writing has attracted researchers' attention and has been advocated by many text book writers, it is also reviewed.

### Developments in Second Language Writing Instruction

Within the period of the 1960s through the 1990s, Raimes (1991) and other researchers such as Connor (1987), Hudelson (1988), Kroll (1992), Leki (1991), and



Zamel (1987) mention four different approaches to L2 writing instruction, each approach having its own distinctive focus. The four approaches reviewed in the following sections are (a) the traditional writing instruction approach, which focuses on the rhetorical and linguistic form of the text; (b) the process approach, in which writing is defined as a set of processes which moves the writer to the final product; (c) the content-based approach, in which writing is connected to the study of specific content and to writing skills needed in this content area; and (d) the reader-dominated approach, which focuses on the demands of the readers in specific disciplines.

#### Traditional Writing Instruction

The first writing approach, with its focus on the rhetorical and linguistic forms, prevailed in the late 1960s and early 1970s when the Audiolingual Method was prevalent. Writing meant drills, substitutions, transformations, and completions. All these aimed at reinforcing or testing the accurate applications of grammatical rules. During the 1970s, sentence-combining exercises were used to focus on the manipulation of grammatical rules. For the concern was the rhetorical form of the text, controlled composition tasks were assigned to provide the texts in which the students would manipulate linguistic forms. The learners were expected to be trained in recognizing the patterns and forms, and then, to use these in their own writing (Raimes, 1991). Thus, the focus of writing instruction

was on the product: the products of other experienced writers which were to be imitated as well as those of the learners'.

Connor (1987) points to the changes in the approaches to the teaching of writing in the last 25 years. She states that in the 1960s and early 1970s, the product-centered approach allowed students to examine the authentic products first and then required them to imitate these products. The main aim was to guide the learner to organize the content according to a given form and then edit or perfect the text. The style was the most important element in writing and the writing process was considered to be linear, determined by the writers before they started writing (Connor, 1987; Raimes, 1991).

Kroll (1991) discussing the evolution of the teaching of writing also points to the great changes that the teaching of writing has undergone. She calls the period of the 1960s and early 1970s a product-approach period because of the primary concern with the completed written product, not with the strategies and processes involved during writing. She submits that because writing served only as reinforcement of language principles, the topic or communication with the audience was not taken into consideration. In this approach, due to the emphasis on habit formation, error-free texts were expected to be produced (Silva, cited in Kroll, 1991).

Kaplan's (1984) first contrastive rhetoric studies focusing on the products of writers from different cultures, also appeared in this period. Kaplan, analyzing about 700 foreign student compositions, demonstrated that different cultures have different paragraph patterns, not all linear as in English, and that the teachers must be aware of these differences and make suitable adjustments in their teaching practices.

#### Period of Process Approach

In the late 1970s there was a shift from the product-centered approach to the writer and the writing process. Typically, the proponents of the process approach started to focus on what learners actually do as they write instead of the finished product. Zamel (1983), who was among the early researchers of composing processes, states that studies conducted earlier to determine the effectiveness of different approaches to the teaching of writing were not helpful because students' written products tell us very little about their instructional needs and it is impossible to teach students to write by just looking at their products. Zamel (1982) also points to the importance of the shift from product to process and advises that teachers should try to understand their students and explore why the students write the way they do and what strategies are employed. She herself observed advanced-level ESL university students as they wrote in order to find out about their processes and pointed out that the students were involved in planning, drafting, reading, rereading,

and revising throughout the composing process. Contrary to the traditional theories of rhetoric which consider writing a linear process, she found that writing was a recursive process. She noted that this paradigm shift from product to process was brought about because of the failure of the previous studies to take into account what writers do and what kind of constraints they go through to produce a text. She also added that it was inaccurate to assume that there is one best method or to prescribe a logically-ordered set of written tasks and exercises based on the supposition that good writing conforms to a predetermined and ideal model.

Kroll (1991), in her review of the writing approaches, considers this shift from a focus on product to a focus on process as the most significant transformation in the teaching of composition. She notes that with the process approach, instead of teaching students how to produce texts, writing teachers have been asked to help students find and understand their own strategies for composing texts. Researchers like Braddock, Lloyd-Jones, and Schoer (cited in Kroll, 1991) were the ones who first brought up the idea that the ways in which writing is actually produced should be examined by teachers and researchers. Besides these researchers in this new approach, Emig is discussed in Kroll and in Zamel (1982) as the pioneer of the technique of the think-aloud procedure, which requires the writers to say everything out loud as they write,

for the purpose of collecting information about students' writing processes.

Zamel (1987) points to Faigly and Witte, Flower and Hayes, Perl, Rose, and to Sommers as the early researchers of process-centered studies. In all their studies it is concluded that emphasizing linearity of writing is wrong because writing is a process of discovering and making meaning through the act of writing itself. These researchers believe that concern with linguistic accuracy should be delayed until writers generate ideas and concentrate on rhetorical organization. Strategies for invention and discovery, consideration of the audience, and the purpose and the content of writing are stressed. New classroom tasks such as journals, peer collaboration, and revision are also emphasized. Students are allowed time and opportunity for selecting their own topics, generating ideas, writing drafts and doing revisions, and receiving feedback. In all this, the idea of writing as a process of thinking, discovering, and making meaning is emphasized. However, despite the research results and process studies that give insight into the complex nature of composing process, both Zamel (1987) and Raimes (1991) point to the the lack of awareness and application of research results. Raimes, for example, states that traditions die hard:

Despite the rapid growth in research and classroom applications in this area, and despite the

enthusiastic acceptance of a shift in our discipline to a view of language as communication and to an understanding of the process of learning, teachers did not all strike out along this new path. The radical changes that were called for in instructional approach seemed to provoke a swift reaction, a return to the safety of the well-worn trail where texts and teachers have priority (p.410).

Like Raimes (1991), Watson-Reekie (1984) also points to the widespread use of model passages in the ESL writing classes despite the emphasis on the writing process. In discussing the usefulness of models in the teaching of writing as well as the criticisms leveled at the process approach, Watson-Reekie claims that although the model-based tradition of composition has been abandoned, the recent emphasis on the importance of input has led to the consideration of advantages of models in the teaching of writing. One of the main advantages according to Watson-Reekie, is that "when models are used within the writing process, students can easily perceive their purpose and utility. In a sense, the student writers thus control the total process, including recourse to the model, because their own writing has quite clearly become the central concern of the lesson" (p.104).

#### Content-Based Approach

The third period mentioned by Raimes (1991) followed the process approach, starting in the mid-1980s. This approach became known as the content-based approach. Some researchers were not much impressed by the process approach because they found it inappropriate

for academic demands. Horowitz (1986a, 1986b), for example, criticized the process approach by pointing out that it is suited only to some writers and academic tasks and that it gives a false impression of how university writing will be evaluated. He claims that the process approach can be good in certain situations but not for the students who rarely have a free choice of topics in their university writing assignments and, therefore, cannot make multiple drafts. Thus, there came a shift from the focus on the processes of the writer to content and, concomitantly, to the demands of the academic institutions. This marked the beginning of the content-based approach.

Shih (1986), in support of a content-based approach, claims that writing from personal experience is very rare in academic writing. Students are often required to demonstrate knowledge in essay exams and summaries, and they must learn to write in specialized formats. With a content focus, learners are helped with the thinking processes, the structure of the content, the rhetorical organization of technical writing, and the tasks ESL students can expect to encounter in their academic careers. Shih finds the content-based approach different from the traditional approaches in four ways. First of all, she points to the fact that the emphasis is on writing from sources such as readings and lectures rather than writing from personal experience. Secondly, the focus is on the content, that is, on what is said rather than on how it is said. Thirdly, the integrated

skills of reading, listening, and writing are required rather than only writing skills. Finally, she posits that a longer period of extended study of the topic with more input from external sources is necessary before composing. This content-based approach led to the analysis of academic writing. English for academic purposes became an important component of this approach. Thus, the aim of the approach was to organize the syllabus to prepare students for university course work, for the kinds of writing required by academic tasks. This was also the beginning of the reader-dominated approach.

#### Reader-Dominated Approach

Analyzing the requirements of academic work meant, of course, investigating the kinds of writing required in the academic setting and taking the course instructors into consideration because they were the readers of student products. Thus, the reader-dominated approach complemented the content-based approach. This audience-dominated approach, as Raimes (1991) calls it, focuses on the expectations of the readers outside the language classroom. Attention to audience was first brought up as a feature of the process approach previously, but it was different. Previously, audience meant the readers inside the classroom, such as peers and teachers in the process approach. However, in the reader-dominated approach, the academic discourse community represents the audience. Raimes claims that this is, in a way, a return to a form-dominated approach



because the main focus is on the forms of writing that a reader will expect and the teaching of those forms as a part of the writing course.

In sum, major shifts in teaching writing have been witnessed in the last 25 years. And yet, as Raimes (1983) points out, new theories are incorporated into old practice. She argues that some step into new unknown territory decisively but others hold on to traditions. Some practitioners, she states, just change the labels of their methods incorporating the terminology but not the concepts. Early research results show that sentence-combining, a technique in teaching writing, has been practiced since the early 1970s and has attracted a great deal of interest among researchers, teachers, and textbook writers. Yet, there have been controversial views about this technique especially when researchers started to pay attention to the process of writing rather than the product. A careful discussion of the pedagogical philosophy underlying the sentence-combining technique is warranted because it has been viewed both positively and negatively.

### Sentence Combining

#### Background of the Technique

Sentence-combining, which first started as sentence-development exercises, has gone through distinct changes in form and concept. Sentence-combining exercises, formally called transformational

sentence-combining practice, are represented in different formats. They can be cued (with some stimulus to trigger responses) and open (autonomy to create one's own responses) with both formats having the purpose of developing a variety of writing skills (Strong, 1986). Mellon (1979), one of the first researchers to introduce sentence-combining into the field of writing pedagogy, states that the idea of sentence combining started with Noam Chomsky's transformational grammar which gave rise to the notion of syntactic maturity and transformationally organized sentence combining. Mellon points out that although the sentence-combining technique replaced the teaching of grammar in language classes, grammatical terminology is not used in sentence-combining exercises because it was convincingly shown that sentence combining did not depend on a grammar curriculum. Strong (1986), however, suggests that sentence combining should not be taken only as syntactic exercises performed upon individual sentences, but as a composition practice in the construction of whole discourse focusing on transition, cohesion, tone, style, and mechanical appropriateness.

Strong (1986) finds sentence-combining exercises a kind of comprehensible input which helps learners construct sentences from underlying propositions. He argues that doing a few sentence-combining exercises may not improve writing competence, but that it may provide a practical way of activating attention to written language and believes that "as an instructional

approach, sentence combining provides practice mainly in revising and editing," (p.2). He also proposes that because sentence combining reduces writing anxiety, it helps with automatism in syntax, freeing up the mental energy of the students to concentrate on planning and composing. Thus, according to Strong (1986), the goal of sentence combining is to make sentence building in writing more automatic.

Kameen (1978), one of the proponents of sentence combining, supports the idea that sentence combining should be included in the curriculum and points out that although sentence-combining exercises had proved to be successful in improving students' writing by research results, there were no systematic, comprehensive sentence-combining programs in American institutions to provide ESL composition students at different levels with practice during the composing processes. He states that with different types of exercises, be they mechanical, meaningful, or communicative, sentence combining can be very helpful in writing instruction. He suggests exercises ranging from highly controlled to less controlled (the first type designed to familiarize the students with the overall goals of sentence-combining practice, the second type aiming at getting them to write something more effectively because what they want to say should not be limited to only those things that they can say, and the third type with the least control to encourage students to explore structural and stylistic variants).

### Research on Sentence Combining

Early research examining the effects of sentence-combining on student writing performance has been carried out at all educational levels, from second grade through adult education, in both first and second languages (Strong, 1986). One of the earliest studies on sentence combining was carried out by Mellon in 1966 (cited in Mellon, 1979). Mellon carried out his study with junior high students to test the hypothesis that regular practice in sentence combining might influence a student's choice of grammatical structures when writing. He introduced sentence combining as a method for enhancing the development of syntactic fluency in English composition. His findings suggested that sentence-combining practice led to an increase in syntactic complexity which he defined as the range of sentence types, longer independent clauses, the use of more subordination, and more embedded sentences.

O'Hare's study on sentence-combining exercises, (cited in Mellon, 1979), which was a replication of Mellon's study in 1966 (Mellon, 1979), used seventh graders in order to test whether the growth of syntactic complexity would be accelerated with direct instruction in sentence combining. As was pointed out by Mellon, O'Hare's experimental treatment was different from his study in that O'Hare eliminated grammatical terms in cued sentence-combining exercises and also in that, unlike Mellon, who introduced his sentence-combining exercises in grammar classes, O'Hare carried out his

experiment in composition classes and emphasized the grammar free aspect of his study. In both of the studies the students were given cued sentence-combining exercises regularly in their classes. Both Mellon and O'Hare (cited in Mellon, 1979) reported that because sentence combining is simple and non-error oriented, students find it interesting. Combs (1976) did a study similar to O'Hare's with seventh graders in which a major part of class instruction was devoted to sentence-combining activities in the composition classes. Combs found that this instruction produced significant gains in syntactic maturity.

Daiker, Kerek, and Morenberg (1978), reporting the study which they carried out at Miami University in 1976, claim that instruction in sentence combining produces significant gains in syntactic maturity. The experimental groups of their study spent an entire semester doing sentence-combining exercises while the control groups carried on with their regular syllabus in the Freshman English courses. The results of their study illustrated that training in sentence combining enhances syntactic fluency with respect to clause length and the mean number of words per clause.

Support for the effect of sentence-combining practice on writing skills in foreign language learning research came from researchers like Cooper, Morain and Kalivarda (cited in Strong, 1986). They examined the effects of sentence combining in French, German, and Spanish classes. Their results showed that sentence

combining speeds up the acquisition of writing skills and enables the students to construct more complex sentences.

As research on sentence combining has accumulated, it has drawn more and more attention from researchers as they have tried to consider the technique from several perspectives. Nugent (1983), for example, finds sentence combining a powerful tool but states that it is sometimes difficult to decide on how sentence-combining exercises best fit into various stages of the composing process such as planning, rescanning, writing, and reviewing.

#### Sentence Combining: Conflicting Views

Some research findings have been mixed in determining the gains made with sentence-combining practice, and some researchers have shown their reservations about the effectiveness of the technique. Zamel (1980), in her evaluation of sentence-combining practice, agrees that sentence combining may be helpful in teaching writing to a certain extent, but she does not think that it should be the only method for writing instruction. She states that because teaching of formal grammar has lost its importance in the teaching of writing due to the research findings, sentence combining may seem to be providing the practice of grammatical problems in writing instruction. She advises that sentence-combining practice be introduced at higher levels because this practice can only help students to

write if they have already developed syntactic maturity in their writing. She argues that for sentence-combining practice to be effective, students should be able to manipulate sentences well and understand these manipulations. She further states that it is doubtful that ESL students who do not possess the necessary linguistic skills will be able to perform these manipulations without some instructional focus on grammar. Although she admits that sentence combining may have a place in the curriculum, she cautions that it may not be appropriate to use it as a total course for teaching writing.

Ney's study in 1976 (cited in Daiker, Kerek & Morenberg, 1978) with college-level ESL students on the effects of sentence combining at Arizona State University, indicated that students practicing sentence combining for an eleven-week term made no gains in syntactic maturity. Commenting on Ney's null finding of the effect of sentence combining on syntactic maturity, Daiker, Kerek, and Morenberg (1978) claim that his results were misleading and irrelevant because the design of Ney's experiment was inadequate. One of the drawbacks in Ney's study, these researchers claim, was that sentence-combining practice was not allotted enough time in class instruction. In the same vein, Strong (1986) also points to the need for sufficient intensity and duration of sentence-combining practice to get desired results.

Concerning the effect of sentence combining on reducing syntactic errors and the relationship between sentence-combining practice and reading comprehension, the evidence is also very mixed. Combs (1979), who investigated the relationship between sentence-combining practice and reading comprehension to see the influence of the technique on reading, states that investigations so far have produced vague and even disappointing results. Combs cites Callahan, Shockly, Straw, Sullivan, Morenberg, and Vaughan, who tested the hypothesis that an experimental group trained in sentence-combining strategies would score higher than a control group on a standardized reading test. They found non-significant differences between the two groups on the posttest. Combs concludes that explorations of the relationship between sentence-combining practice and reading comprehension remain ambiguous.

Maimon and Nadine (1979) found that sentence combining was not very effective in reducing errors in student writing. They conducted a study investigating the effect of sentence-combining exercises on improving students' writing skills. They used 15 or 20 minutes in a composition course each week over a period of several weeks and found that as the cognitive demands of the assignment increased, the number of embedding errors also increased. In a follow-up study, Maimon and Nadine looked at the same students one year later and the results showed that students were in the same error range. Strong (1986), however, argues that as students



reach syntactic maturity, they not only try new things and solve new problems, but they also commit new errors because their minds focus on more difficult cognitive tasks and, therefore, their likelihood for error increases.

#### Recent Research on Sentence Combining

Despite conflicting views about its effectiveness in writing instruction, sentence-combining practice has been used extensively in ESL classrooms because sentence-combining exercises are employed in most writing textbooks to reinforce step-by-step composition skills (Johnson, 1992). Johnson, noting sentence combining as one of the widely used instructional techniques in the teaching of writing, designed her study to explore the cognitive strategies of L2 writers during different types of sentence-combining tasks. She also wanted to examine how students' written products emerge and what skills might be needed to produce syntactically mature writing. In addition, her aim was, through better understanding of the writing process, to establish the role sentence combining should play in L2 writing instruction. Her subjects were 9 advanced-level ESL graduate students with different native-language backgrounds in a graduate-level ESL writing course at a large university in the United States. The results of her study indicated that different types of sentence-combining tasks, open and controlled, placed similar cognitive demands on the students and that L2 writers

most frequently engaged in the strategies of Restating Content, Constructing Meaning, and Planning as they dealt with sentence-combining tasks. She also notes that sentence-combining tasks may be appropriate for L2 writers to help them to focus on the logical organization of information in their compositions.

This researcher, in examining the earlier research and Johnson's (1992) research, realized that enough evidence has been collected to suggest that sentence combining can be helpful for EFL students too because it has been widely used and has been found to be effective in writing instruction in many settings. Considering also the few studies that have examined sentence combining in EFL settings and the mixed results of the earlier research, this researcher decided to investigate the cognitive strategies of EFL students during sentence-combining tasks. It was hoped that the results would not only lead to a better understanding of the strategies involved in EFL situations but would also provide students with the skills required to benefit from sentence-combining tasks.

## CHAPTER 3 RESEARCH METHODS

### Introduction

The present study investigated the cognitive strategies of EFL students performing sentence-combining tasks used in teaching composition. It aimed at answering the following research questions using think-aloud protocols of 6 university students. The questions explored were (a) What cognitive strategies do Turkish EFL students use when performing sentence-combining tasks?; (b) Are there differences in the students' cognitive strategies with respect to topic familiarity? If so, what are these differences?; (c) Are there differences between the cognitive strategies of EFL students with different proficiency levels? If so, what are these differences?; and (d) What are the differences between the cognitive strategies of ESL students and EFL students?

### Subjects

Six Turkish EFL students, 3 males and 3 females, all studying at METU, were the subjects in the study. The students were members of the researcher's freshman English course for two semesters. This freshman course, like all other freshman courses, is offered to the students who pass an English proficiency test given to them at the time they enter the university. In the freshman English courses, which are compulsory for all

the students, reading comprehension and academic writing skills are emphasized.

Subjects for the study were selected from the researcher's classes because they were already familiar with sentence-combining exercises. It was also easier to arrange sessions to carry out the study according to their schedules, and most importantly, the researcher was able to establish rapport and trust with her subjects--a factor which is crucial in a case study of this type (Perl, cited in Zamel, 1983).

The 6 subjects who participated were chosen by the researcher because of their willingness to take part and because their schedules allowed them to meet with the researcher regularly. Three of the subjects were studying metallurgical engineering, 1 was studying computer engineering, and the other 2 economics and architecture.

Five of the subjects were freshmen, but it was their second year at the university because they had spent one year (two semesters) at the preparatory school studying English in order to be able to pass the proficiency test required for all admission into regular university courses. One subject had studied only one semester at the preparatory school before passing the proficiency test. Table 1 gives background information about the subjects.

Table 1

Subject Characteristics

Name	Gender	Age	L1	Years of English	Prof. score %	Field of study
Bora	M	20	Turkish	5	83.5	Metal.
Erin	F	19	"	8	81.5	Econ.
Cem	M	19	"	8	76.5	Comp.
Alp	M	21	"	7	70.5	Metal.
Arzu	F	21	"	8	62.5	Metal.
Sevgi	F	23	"	4	60.0	Arch.

Note. L1 = native language, Prof. score = Proficiency score, Arch. = Architecture, Econ. = Economics, Comp. = Computer, Metal. = Metallurgy.

## Instruments

The instruments used in the study were a background information questionnaire, an English proficiency test prepared by the Department of Modern Languages at METU, and The Coding System of Cognitive Strategies which was modified by Johnson (1992) from Durst's coding system for analyzing the think-aloud protocols. The background-information questionnaire prepared by the researcher included items on the students' reading habits and their own evaluations of the skills in English which they find most difficult (See Appendix A).

### The English Proficiency Test

The English proficiency test which is administered each year to the students entering the university assesses students' English language proficiency and measures syntax, vocabulary, and reading comprehension. The test consists of three parts--grammar (80 items, each of which is 1/2 point), vocabulary (15 items, each of which is 1 point), and reading comprehension (45 items, each of which is 1 point). The test consists of a total of 140 multiple choice items, and subjects are allowed 2 1/2 hours to complete it.

### Coding System

In the coding system of cognitive strategies which was used by Johnson (1992) in her study, 10 types of cognitive strategies were identified. They were lower and higher-level questions about the task and the ideas given in the text, planning, constructing meaning, constructing cohesion, and evaluation. The following is the coding system of cognitive strategies used in sentence combining (Johnson, 1992)

(LLQ) Lower Level Questioning (questions about the task)

Expressing lack of understanding about aspects of the writing task itself or about points not directly stated in the sentences to be combined.

Can I change these around or do I have to keep them in the same order?  
Do I combine these using who?

(HLQ) Higher Level Questioning (questions about ideas or information)

Uncertainties the writer expresses concerning ideas or information directly retrievable or easily deduced from the sentences.

What's "this" referring to?  
Which one can sound go through faster?

- (LLP) Lower Level Planning (local planning)  
Local plans that focus on words or phrases within the text which the writer plans to omit, replace, or add to other sentences.

I'm thinking about how to put the students, the students, the students together.  
So when I combined that I just moved one word to the end.  
The first thing I think about is the repetition of words

- (HLP) Higher Level Planning (global planning)  
More global or abstract plans focusing on the writing process, written text structures, or the need for connections between unrelated ideas and events from the sentences.

I'm getting a hierarchy here of ideas that support more general ideas.  
I'd like to combine the sentences based on the whole meaning.  
So first I need to figure out the information which I can get from all the sentences.

- (RC1) Restating Content 1 (reading the text)  
Repeating and/or reading the sentences given in the passage.

(Reads) It travels at different speeds through different mediums.

- (RC2) Restating Content 2 (reading/writing own text)  
Repeating, writing, and/or reading the sentences written in the writer's own text.

(Reads own text) For example, sound travels through dry air at about 700 miles an hour.  
(Writes) Obviously, sound travels faster through solids and liquids...

(CM1) Constructing Meaning 1 (ideas directly from the text)

Identifying connections between ideas and/or concepts given in the passage. Looking for generalizations from given information. Classifying information which is given.

So it means that it moves faster through the water than through the ground. The outcome of practicing English everyday seems to cause the fluency of the new language. This explains why it must have some material to pass through.

(CM2) Constructing Meaning 2 (new ideas or meaning)

Forming new ideas or relations among ideas from concepts and information in the sentences. Supporting a new generalizations, relating content to personal knowledge, making an inference.

Because they are two separate ideas with nothing relevant to each other. Well, I'm trying to figure out the order which is the fastest. There seems to be some relationship among sound and other materials and speeds.

(CC) Constructing Cohesion (cohesive devices)  
Specifically stating or looking for word(s) or phrase(s) which the writer uses to connect information or concepts given in the text.

Here I thought of "so" to connect these two ideas...  
I can refer with "who" which would be "pilot"...  
"And" seems to connect these two sentences...

(E) Evaluation (judging appropriateness)  
Judging the appropriateness of the written product and the writer's own behaviors. Assessing meaning or language, reformulating, validating.

I like the flow of this sentence...  
Now I'm not sure if it sounds awkward...  
Oh, no but this is not right...

(pp. 74-75).



### Protocol Studies

As researchers started to look more closely at individual processes in composing, it was believed that this was made possible by think-aloud protocols of students' performing a writing task (Swarts, Flower, & Hayes, 1984). Think-aloud protocols are widely used by researchers because it is accepted that capturing in detail the moment-to-moment thinking of a writer performing a writing task is possible with think-aloud protocols. Think-aloud protocol analysis is defined by Swarts, Flower, and Hayes as a theory-driven form of research. They point out that protocol analysis gives the researcher detailed information about the writer's process of planning, goal-setting, decision-making, and revising. In this study, think-aloud protocol analysis was used as a research technique to examine the cognitive strategies in the coding system (Johnson, 1992).

In a think-aloud writing protocol, the subject works in a room with a desk, writing materials, a cassette tape recorder and a tape. After the researcher gives the subject general explanations about the task, the subject is then told to say everything out loud as he or she is thinking and writing. The subjects are also informed that any kind of remark and even irrelevant comments are fine, but that they should try to avoid analyzing what they are thinking (Swarts, Flower, & Hayes, 1984).

After the task is over, the tape recording of the writer's think-aloud is transcribed and coded. Depending on the purpose of the study, the protocol is divided into various units (clauses are accepted by Swarts, Flower, and Hayes, 1984 as the most basic units to measure a writer's utterances). The protocol can be matched against the student writer's notes and the product in order to compare what the student writer says during the think-aloud protocols with the final product. The final step is to analyze these communication units by matching them with a coding system according to the purpose of the study.

#### Procedures

The researcher collected data over a 4-week period in the middle of the spring semester (April-May 1994) in individual sessions with each subject. At the onset of the study, the procedures of the study were explained to the subjects and then they were given the letter of consent (see Appendix B). Having all agreed to the procedures, they were given the background-information questionnaire to complete, and convenient times were set for each student to take the proficiency test. Although these students had already taken a proficiency test before starting the first year, the test was given to them again in order to allow the researcher to assess their proficiency levels at the onset of the study. The main objective in assessing their proficiency levels was to investigate if there would be any differences in the

cognitive strategies of the students with varying proficiency levels.

Data collection sessions took place in the researcher's private office, and all six think-aloud protocols were audio-taped. Each student completed the sentence-combining task of two topics in one session. The sentence-combining exercises which were given to the students consisted of a low-level scientific topic used by Johnson (1992) in her study and a daily conversation topic prepared by the researcher after inspecting the writing samples in the students' course book, The Process of Composition by Reid (1988). They were open sentence-combining tasks of 11 and 10 sentences, respectively, without cued responses (see Appendix C).

The students were free to complete the tasks in one session at their own pace. After the task was explained to them, the researcher modeled the think-aloud procedures based on suggestions by Ericsson and Simon (1984) and Swarts, Flower, and Hayes (1984). The students were given two simple sentences to combine so that they could follow the procedures easily. Then they were given time to ask questions and to complete a sample of two sentences in a similar fashion. The students were also given the freedom to use either the target language, English, or their L1, Turkish, in thinking aloud but all showed their preference for the native language saying that they would express themselves more comfortably and thoroughly. This created no problem for the researcher, who is a native

speaker of Turkish. It was also observed by the researcher that the idea of using their L1 made the students more comfortable, particularly in a situation in which they were being asked to perform tasks with which they were not familiar. Each data-collection session for the sentence-combining tasks lasted from 30 to 40 minutes. The researcher was present in the room and had a chance to observe the students as they wrote and prompted them to speak up whenever they seemed to be silent. They were asked to write with pens and cross out anything they wanted to change, which later helped the researcher in coding their think-aloud protocols.

#### Data Analysis

Each protocol was transcribed word for word in Turkish first and then translated into English by the researcher. Transcribed protocols in English were segmented into communication units. The communication units were identified according to Johnson's (1992) definitions. They were taken as distinct comments concerning one idea containing a main clause and the subordinate clauses which may be attached to them. For example, a subject's words "now, we have to talk about the reasons" were taken as a communication unit (see Appendix D), and matched with Higher Level Planning (HLP) in the coding system. False starts and pauses were not coded. One dot (.) indicated a very short pause, three dots (...) indicated a pause of about three seconds when subjects were trying to complete a phrase.

The researcher's comments were put in parenthesis (), and quotation marks (") were used to indicate the words from the tasks which the students quoted.

These protocols were then analyzed and every communication unit was evaluated according to the cognitive strategies described in the coding system. The researcher analyzed each protocol along with the subject's written product to be able to follow the flow of the communication units used by the subjects. Each communication unit was coded as to one of the 10 cognitive strategies in the coding system and counts were made. The data collected for each student were compared with those of one another, taking into consideration the different language proficiency levels of the subjects. Data on the subjects were also compared with those collected by Johnson (1992) in order to provide more insights into the phenomenon of sentence combining.

## CHAPTER 4 PRESENTATION AND ANALYSIS OF DATA

### Overview of the Study

The present study attempted to examine the cognitive strategies of Turkish EFL university students during sentence-combining tasks. The questions addressed were (a) What are the cognitive strategies of Turkish EFL students in sentence-combining tasks?; (b) Are there differences in the students' cognitive strategies with respect to topic familiarity? If so, what are these differences?; (c) Are there differences between the cognitive strategies of EFL students with different language proficiency levels? If so, what are these differences?; and (d) What are the differences between the cognitive strategies of ESL students and EFL students?

The students were assigned two different topics so that the cognitive demands of sentence-combining tasks with respect to topic could be examined. Topic 1 contained 11 sentences and dealt with an everyday subject--bicycles and cars--with which the students were familiar. Topic 2 was a semiscientific subject on sound, and there were 10 sentences to be combined. The sentences corresponding to each topic were to be manipulated to form a cohesive paragraph (see Appendix C). The think-aloud protocols were transcribed and segmented into communication units. The communication units were then analyzed for 10 cognitive strategies according to the coding system used by (Johnson, 1992).

The students were also observed completing their tasks by the researcher, which was very helpful in coding the communication units in the protocols. No modifications were made in the coding system used by Johnson (1992). The analyses of communication units are illustrated in the following excerpts taken from the transcript of the think-aloud protocol of a female subject in the present study.

Table 2

Sentence-Combining Excerpts From Two Topics

Communication Units	Cognitive Strategies
-Do I try to choose from these?	Lower-Level Question
-What does "sound" mean?	Higher-Level Question
-I just tried to group them.	Lower-Level Planning
-Now I'll try to find something that would match this sentence.	Higher-Level Planning
- "Biking is Healthy" (reads)	Restating Content 1
- "Sound travels" ... and	
whereas (reads as she writes)	Restating Content 2
-He is comparing the bicycle with cars.	Constructing Meaning 1
-I can say 'as you can see...'	Constructing Meaning 2
-Let me put 'but' here.	Constructing Cohesion
-It can stay like this.	Evaluation

## Results of the Study

### Cognitive Strategies of Turkish EFL Students in Sentence-Combining Tasks

The first research question addressed which cognitive strategies EFL students exhibit during sentence-combining tasks. There were 595 communication units coded in the think-aloud protocols of the 6 subjects. The mean of the communication units used by all the students for both topics was 49.59, and the standard deviation was 13.29. The means and the standard deviations for cognitive strategies are shown in Table 3.

The four most frequently used strategies were Higher-Level Planning ( $\bar{M} = 10.08$ ,  $SD = 4.45$ ), Restating Content 2 ( $\bar{M} = 7.59$ ,  $SD = 2.63$ ), Constructing Meaning 1 ( $\bar{M} = 7.17$ ,  $SD = 2.69$ ) and Restating Content 1 ( $\bar{M} = 6.67$ ,  $SD = 1.63$ ).

These results reveal that Turkish EFL students were most frequently engaged in Higher-Level Planning. Higher-Level Planning as defined by Johnson (1992) involves focusing on the text structures, finding connections between ideas, and planning the task as a whole. The second most frequently used strategy was Restating Content 2. This strategy involves reading and/or writing the sentences which appear in the text. The third most frequently used strategy, Constructing Meaning 1, entails the subjects' reading and understanding the content of the given task and writing their own texts. The close relationship between Restating content 1 ( $\bar{M} = 6.67$ ,  $SD = 1.63$ ) and Constructing Meaning 1 ( $\bar{M} = 7.17$ ,  $SD = 1.63$ ) illustrates



that students first spent some time trying to comprehend the given sentences in order to be able to produce their own texts.

Table 3

Means of Communication Units for Type of Cognitive Strategies

Cognitive Strategies	<u>N</u>	<u>M</u>	<u>SD</u>
LLQ	(6)	1.42	1.31
HLQ	(6)	1.42	1.55
LLP	(6)	1.92	1.57
HLP	(6)	10.08	4.45
RC1	(6)	6.67	1.63
RC2	(6)	7.59	2.63
CM1	(6)	7.17	2.69
CM2	(6)	5.67	4.34
CC	(6)	4.67	2.84
E	(6)	3.00	1.84

Note. LLQ = Lower-Level Questioning, HLQ = Higher-Level Questioning, LLP = Lower-Level Planning, HLP = Higher-Level Planning, RC1 = Restating Content 1, RC2 = Restating Content 2, CM1 = Constructing Meaning 1, CM2 = Constructing Meaning 2, CC = Constructing Cohesion, E = Evaluation.

The cognitive strategy of Constructing Meaning 2, with a mean of 5.67 and a standard deviation of 4.34, was the fourth most frequently used strategy. This cognitive strategy is related to formulation of new ideas or relations among given sentences which requires full understanding of the text, formulating new ideas relating to personal knowledge, and making inferences. The strategy of Constructing Cohesion was the fifth most frequently used strategy. The mean of the strategy of Constructing Cohesion, which involves thinking about transitional words or expressions to connect sentences given in the text was 4.67 with a standard deviation of 2.84. This indicates that the students were more concerned with formulating their own ideas than finding an appropriate transitional expression that was missing in the text.

The least frequently used strategies were Lower-Level Planning ( $\bar{M} = 1.92$ ,  $SD = 1.57$ ), Higher-Level Questioning ( $\bar{M} = 1.42$ ,  $SD = 1.55$ ) and Lower-Level Questioning ( $\bar{M} = 1.42$ ,  $SD = 1.31$ ). The strategy of Lower-Level Planning involves the subjects' omitting or replacing words in the given text. Higher-Level Questioning is related to the writer's questioning ideas or information which can be retrieved from the text itself, and the strategy of Lower-Level Questioning is related to lack of understanding of the task itself or the points not directly stated in the given sentences. Because all these deal with the mechanics of the task or the words and/or expressions in the text, it could be said that

the students did not have problems with the mechanics because they used these strategies the least. The strategy of Evaluation ( $\underline{M} = 3.00$ ,  $\underline{SD} = 1.84$ ) was also among the least frequently used strategies. This strategy involves judging the appropriateness of the students' own products. After planning their own sentences to write, the students did not check again to see whether their sentences were correct or not.

Hence, it was observed that once the mechanics of the task and the meaning of the words and expressions in the text were clear to Turkish EFL students, they did not focus much on Lower-Level Planning, Higher or Lower-Level Questioning or Evaluating their own texts. They were most frequently engaged in planning, reading to understand the given text, and forming their own sentences using the ideas in the text with appropriate transitional expressions.

#### Differences in EFL Students' Cognitive Strategies with Respect to Topic Familiarity

As it is illustrated in Table 4, the most frequently used strategy for both Topic 1 and Topic 2 was Higher-Level Planning (Topic 1,  $\underline{M} = 9.33$ ,  $\underline{SD} = 2.94$ ; Topic 2,  $\underline{M} = 10.33$ ,  $\underline{SD} = 4.45$ ). Whereas the second most frequently used strategy for Topic 1 was Restating Content 2 ( $\underline{M} = 7.17$ ,  $\underline{SD} = 2.04$ ), it was Restating Content 1 ( $\underline{M} = 8.67$ ,  $\underline{SD} = 1.63$ ) for Topic 2. This shows that Topic 2, which was about sound (a semiscientific topic), proved to be more difficult because Restating Content 1 refers to reading the given text to comprehend the ideas

stated in the text. Restating Content 2, on the other hand, is related to writing and reading their own text.

Table 4

Means of Communication Units for Type of Cognitive Strategies for Topic 1 and Topic 2

Cognitive Strategies	Topic 1		Topic 2	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
LLQ	2.33	2.07	0.50	1.31
HLQ	1.33	0.84	1.50	1.55
LLP	2.00	1.67	1.83	1.57
HLP	9.33	2.94	10.83	4.45
RC1	4.67	1.63	8.67	1.63
RC2	7.17	2.04	8.00	2.63
CM1	5.83	3.31	8.50	2.69
CM2	5.83	4.31	5.50	4.34
CC	5.33	3.14	4.00	2.84
E	3.67	2.16	2.33	1.84

Note. LLQ = Lower-Level Questioning, HLQ = Higher-Level Questioning, LLP = Lower-Level Planning, HLP = Higher-Level Planning, RC1 = Restating Content 1, RC2 = Restating Content 2, CM1 = Constructing Meaning 1, CM2 = Constructing Meaning 2, CC = Constructing Cohesion, E = Evaluation.

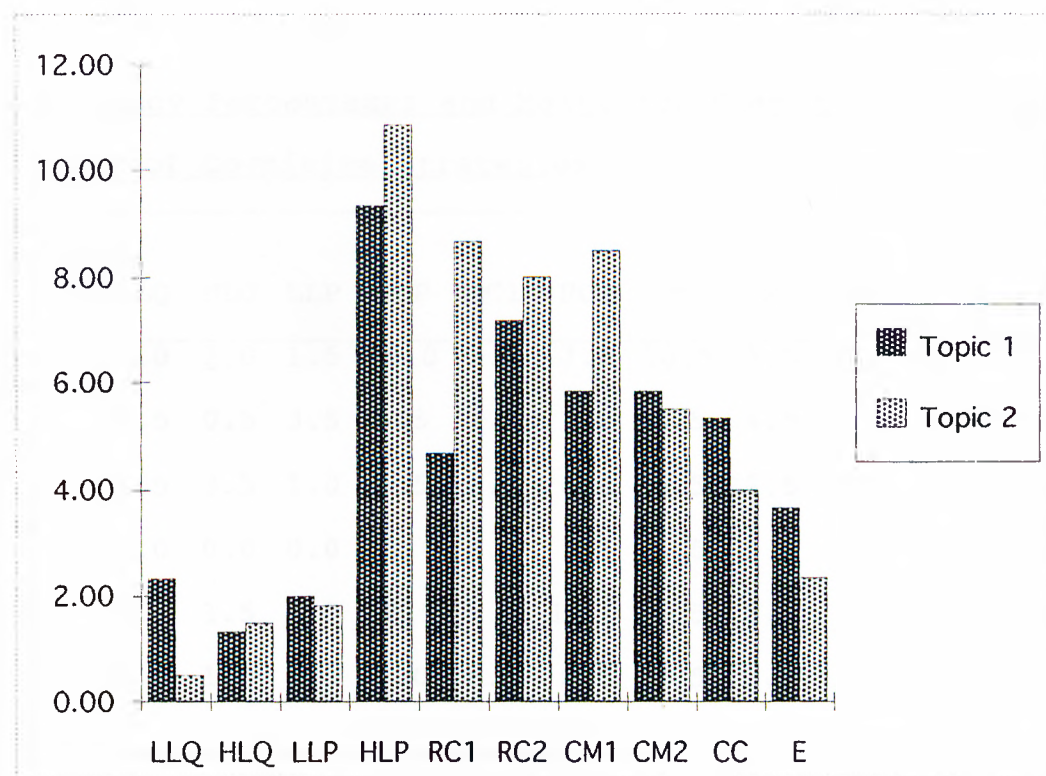
The third and the fourth most frequently used strategies for Topic 1 were Constructing Meaning 1

( $\underline{M}$  = 5.83,  $\underline{SD}$  = 3.31) and Constructing Meaning 2 ( $\underline{M}$  = 5.83,  $\underline{SD}$  = 4.31), whereas for Topic 2 the third most frequent strategy was Constructing Meaning 1 ( $\underline{M}$  = 8.50,  $\underline{SD}$  = 2.69) and the fourth most frequent strategy was Restating Content 2 ( $\underline{M}$  = 8.00,  $\underline{SD}$  = 2.63). This shows that the strategy of Restating Content 2, which involves students' writing and reading their own texts were used after the students completely read and understood the given text for Topic 2.

The least frequently used strategy for Topic 2 was Lower-Level Questioning ( $\underline{M}$  = 0.50,  $\underline{SD}$  = 1.31). This strategy was also among the least frequently used strategies for Topic 1 ( $\underline{M}$  = 2.33,  $\underline{SD}$  = 2.07). This shows that students had already comprehended the mechanics of the task for Topic 1 task and for Topic 2, the second task, they did not have any questions. Figure 1 illustrates the relationship of cognitive strategies between two topics.

In conclusion, the four most frequently used strategies were the same for both of the topics with the exception that Restating Content 1 (reading the text to understand the ideas) took the second place for Topic 2 which was more difficult than Topic 1 for the students. The students tended to refer to very similar cognitive strategies regardless of the familiarity of the topic in completing these sentence-combining tasks. Nevertheless, they spent more time understanding the ideas in the text because Topic 2 about sound proved to be more difficult for them than Topic 1 about a bicycle.

Figure 1. Means of communication units for type of cognitive strategies for Topic 1 and Topic 2



Note. LLQ = Lower-Level Questioning, HLQ = Higher-Level Questioning, LLP = Lower-Level Planning, HLP = Higher-Level Planning, RC1 = Restating Content 1, RC2 = Restating Content 2, CM1 = Constructing Meaning 1, CM2 = Constructing Meaning 2, CC = Constructing Cohesion, E = Evaluation.

Differences in the Cognitive Strategies of EFL Students  
with Different Language Proficiency Levels

This study also attempted to examine whether there were any differences in cognitive strategies used by the students with different language proficiency levels and if so, what the differences were. Table 5 illustrates the means for each cognitive strategy used by 6 subjects completing their sentence-combining tasks.

Table 5

Proficiency Percentages and Means for Communication Units  
for Type of Cognitive Strategies

Name & Prof. %	LLQ	HLQ	LLP	HLP	RC1	RC2	CM1	CM2	CC	E	T
Bora (83.5)	1.0	2.0	1.5	15.0	7.5	7.0	10.5	9.5	6.0	3.5	63.5
Erin (81.5)	1.5	0.5	3.5	6.5	7.0	7.0	4.5	4.5	7.0	2.5	44.5
Cem (76.5)	0.5	3.5	1.0	6.5	5.5	6.0	6.5	2.5	4.5	2.5	39.0
Alp (70.5)	2.0	0.0	0.0	15.0	6.5	9.5	5.5	5.5	5.0	1.0	50.0
Arzu (62.5)	0.5	1.5	3.0	10.5	5.0	11.0	6.5	8.5	4.5	4.0	55.0
Sevgi (60)	3.0	1.0	2.5	7.0	8.5	5.0	9.5	3.5	1.0	4.5	45.5

Note. Prof. = proficiency, LLQ = Lower-Level Questioning, HLQ = Higher-Level Questioning, LLP = Lower-Level Planning, HLP = Higher-Level Planning, RC1 = Restating Content 1, RC2 = Restating Content 2, CM1 = Constructing Meaning 1, CM2 = Constructing Meaning 2, CC = Constructing Cohesion, E = Evaluation, T = total.

There did not seem to be any relationship between cognitive strategies used by these subjects and the language proficiency levels. In order to examine whether there was a relationship between language proficiency and cognitive strategies, the two subjects with the highest proficiency scores and also the two subjects with the lowest proficiency scores were compared.

Table 6 illustrates the means for type of cognitive strategies of 4 students with the highest and the lowest proficiency scores.

Table 6

Means for Communication Units for Type of Cognitive Strategies of Four Students

Name & Prof. %	LLQ	HLQ	LLP	HLP	RC1	RC2	CM1	CM2	CC	E	T
Bora (83.5)	1.0	2.0	1.5	15.0	7.5	7.0	10.5	9.5	6.0	3.5	63.5
Erin (81.5)	1.5	0.5	3.5	6.5	7.0	7.0	4.5	4.5	7.0	2.5	44.5
Arzu (62.5)	0.5	1.5	3.0	10.5	5.0	11.0	6.5	8.5	4.5	4.0	55.0
Sevgi (60)	3.0	1.0	2.5	7.0	8.5	5.0	9.5	3.5	1.0	4.5	45.5

Note. Prof. = proficiency, LLQ = Lower-Level Questioning, HLQ = Higher-Level Questioning, LLP = Lower-Level Planning, HLP = Higher-Level Planning, RC1 = Restating Content 1, RC2 = Restating Content 2, CM1 = Constructing Meaning 1, CM2 = Constructing Meaning 2, CC = Constructing Cohesion, E = Evaluation, T = total.

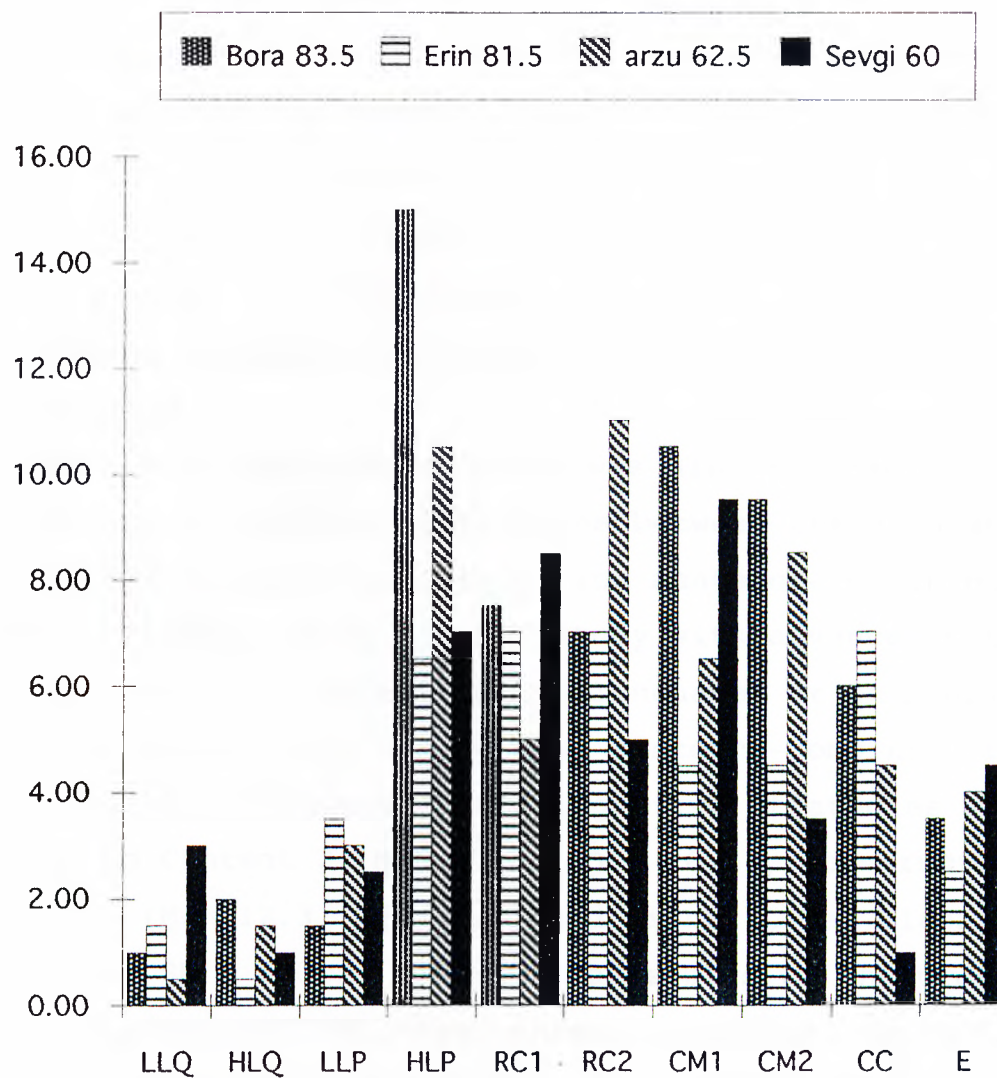


Bora, with the highest language proficiency score (83.5), used the strategy of Higher-Level Planning ( $\underline{M} = 15.0$ ) most frequently and Lower-Level Questioning ( $\underline{M} = 1.0$ ) the least. Erin, however, who had the second highest proficiency score, used the strategies of Restating Content 1 ( $\underline{M} = 7.0$ ), Restating Content 2 ( $\underline{M} = 7.0$ ) and Constructing Cohesion ( $\underline{M} = 7.0$ ) most frequently. The strategy of Higher-Level Planning ( $\underline{M} = 6.5$ ) was the fourth most frequent strategy that she used. There seems to be no relationship between the most and the least frequently used strategies of these students even though they had high language proficiency scores. The three least frequently used strategies were Lower-Level Questioning ( $\underline{M} = 1.0$ ), Lower-Level Planning ( $\underline{M} = 1.5$ ) and Higher-Level Questioning ( $\underline{M} = 2.0$ ) for Bora. Erin, however, used the strategies of Higher-Level Questioning ( $\underline{M} = 0.5$ ), Lower-Level Questioning ( $\underline{M} = 1.5$ ) and Evaluation ( $\underline{M} = 2.5$ ) least frequently.

The results of the study do not show any relationship between the cognitive strategies of the two students with the lowest language proficiency scores. Sevgi, with the lowest proficiency score (60.0), used the strategy of Constructing Meaning 1 ( $\underline{M} = 9.5$ ) most frequently, whereas Arzu (62.5) used Restating Content 2 ( $\underline{M} = 11.0$ ) and Higher-Level Planning ( $\underline{M} = 10.5$ ) most frequently. Arzu used the strategy of Lower-Level Questioning ( $\underline{M} = 0.5$ ) least frequently as did Bora ( $\underline{M} = 1.0$ ), the student with the highest proficiency score. For both Arzu and Sevgi, the strategy of Evaluation was the fifth most frequently

used strategy. Figure 2 illustrates the means of the cognitive strategies used by these 4 subjects.

Figure 2. Means of communication units for four students with the highest and the lowest language proficiency scores



Note. LLQ = Lower-Level Questioning, HLQ = Higher-Level Questioning, LLP = Lower-Level Planning, HLP = Higher-Level Planning, RC1 = Restating Content 1, RC2 = Restating Content 2, CM1 = Constructing Meaning 1, CM2 = Constructing Meaning 2, CC = Constructing Cohesion, E = Evaluation.

In conclusion, the findings show that there was no distinct relationship between proficiency levels of the cognitive strategies that these students exhibited while completing their sentence-combining task. The student with the highest language proficiency score used the strategy of Higher-Level Planning ( $\bar{M} = 15.0$ ) most frequently. This was not observed, however, with the student who had the second highest proficiency score, Erin (81.5). Bora, (83.5) used the strategy of Evaluation ( $M = 3.5$ ) almost as frequently as the students, Arzu (62.5) and Sevgi (60.0).

#### Differences Between the Cognitive Strategies of ESL and EFL Students

The aim of the present study was also to examine whether there would be differences between the strategies ESL and EFL students exhibit during sentence-combining tasks. Johnson (1992), in her study with advanced ESL students having different native languages at an American university found that in the open sentence-combining task the three most frequently used cognitive strategies were "Restating Content 2 ( $\bar{M} = 17.1$ ,  $\underline{SD} = 20.2$ ), Constructing Meaning 1 ( $\bar{M} = 12.3$ ,  $\underline{SD} = 3.3$ ) and Higher-Level Planning ( $\bar{M} = 10.8$ ,  $\underline{SD} = 8.0$ )" (p.66). The results of the present study illustrated that these three strategies, Restating Content 2 ( $\bar{M} = 7.59$ ,  $\underline{SD} = 2.63$ ), Constructing Meaning 1 ( $\bar{M} = 7.17$ ,  $\underline{SD} = 2.69$ ) and Higher-Level Planning ( $\bar{M} = 10.08$ ,  $\underline{SD} = 4.45$ ) were the most frequently used cognitive strategies used by Turkish EFL students in the open sentence-combining tasks.

These results reveal that open sentence-combining tasks (with no clues given to combine the sentences in the text) demand similar cognitive strategies from both EFL and ESL students, and that students, whether they are in an ESL situation or an EFL situation, exhibit the same kind of behaviour in constructing meaning based on the information given in the text (they plan and construct their own sentences).

In conclusion, the results of the present study show that EFL students studying at an English-medium university use the strategies of Higher-Level Planning, Restating Content 2, Constructing Meaning 1, and Restating Content 1 most frequently regardless of topic familiarity. A more difficult topic, however, requires more reading and constructing meaning out of the information given in the text. The students regardless of their language proficiency levels used the same five strategies, strategies of Higher-Level Planning, Restating Content 1 and 2, and Constructing Meaning 1 and 2 most frequently in performing their tasks in combining sentences. However, the student with the lowest proficiency score needed to read more to understand the ideas in the text, and thus, used the strategy of Constructing Meaning 2 ( $\bar{M} = 9.5$ ) most frequently. She also used the strategy of Evaluation ( $\bar{M} = 4.5$ ) the most frequently among the 6 students in the group.

Furthermore, the cognitive strategies used by ESL students and the cognitive strategies used by EFL students were almost the same. The students with

different language backgrounds studying at an American university and the students studying at a Turkish university exhibited the same strategies while performing a similar kind of sentence-combining tasks. The subjects in Johnson's (1992) were advanced-level graduate students studying in different fields at the university and the subjects in the present study were Turkish university students, intermediate freshmen. As Johnson pointed out these advanced-level students were selected because sentence-combining instruction is most often designed for intermediate to advanced-level ESL/EFL writers.

## CHAPTER 5 DISCUSSIONS OF FINDINGS

### Conclusions and Implications

The present study aimed at investigating the cognitive strategies that EFL students employ during sentence combining, which is a widely accepted technique in teaching writing. The researcher believed that evaluating students' final written products based on preconceived and fixed ideas about good writing does not help to improve students' writing skills. It was assumed that examining the processes the students exhibit during a writing task and the demands made on the students by this given task would help teachers to adopt more effective methods in their approaches to the teaching of writing skills.

In the light of this and the fact that sentence-combining practice has been found to have a positive effect on students' writing skills (Mellon, 1979), the present process study attempted to investigate the cognitive strategies of EFL students during sentence-combining tasks. The results of this study illustrate that EFL students, most frequently, engage in Higher-Level Planning, Restating Content, and Constructing Meaning as they complete sentence-combining tasks. This suggests that sentence-combining tasks require EFL students to read in order to understand the given text and plan in order to produce their own texts.

These results show that EFL writers take the sentences given to them in open sentence-combining tasks as

information to be transferred into a text of their own and for this reason, they use the strategy of planning most frequently. The highest mean of the strategy of Higher-Level Planning ( $\bar{M} = 10.08$ ,  $SD = 4.45$ ) illustrates this.

The next two most frequently used strategies were Restating Content and Constructing Meaning. The students were more concerned with meaning because the syntactically accurate sentences were already given to them. Once they planned which sentences to choose to combine, they just needed a transitional expression to use. Thus, the strategy of Constructing Cohesion was more frequently used than the strategy of Evaluation.

The students in the present study did not refer to the strategies of Higher and Lower-Level Questioning and Lower-Level Planning, which implied that the task was clear enough and they did not have any problems with how to carry it out. As was mentioned before, these students were already familiar with the type of task in the researcher's class.

Similar composing processes such as planning, goal-setting, decision-making and revising during free writing are also observed by other researchers in this field (Swarts, Flower, & Hayes, 1984). Although this study did not aim at comparing the strategies required by free writing with the strategies required by sentence-combining tasks, these results suggest that sentence-combining tasks require students to employ similar types of cognitive strategies required in free writing.

An attempt was also made to examine the differences in the cognitive strategies that the students use with respect to topic familiarity. The results indicated that there were not important differences in the cognitive strategies employed with respect to topic familiarity. Similar cognitive demands were placed on these students by two different topics. The only difference was observed in the strategy of Restating Content 1, which was related to reading the text and the strategy of Constructing Meaning 1, which was defined as understanding the ideas given in the text. As Topic 2 was more difficult than Topic 1, the students used Restating Content ( $\bar{M} = 8.67$ ) and Constructing Meaning 1 ( $\bar{M} = 8.50$ ) more frequently in manipulating sentences in Topic 2 than they did with Topic 1.

This means that the only difference between the two topics was that Topic 2, which was a semiscientific topic about sound, required more attention to understand and construct meaning. The students spent more time on reading the given sentences and making meaning out of them. In both of the topics, the strategy of Higher-Level Planning was used most frequently. However, students paid less attention to cohesive devices with the more difficult topic.

Another question addressed was whether there were any differences in the cognitive strategies of the students with different language proficiency levels. The results indicated that there was no relationship between the cognitive strategies and the proficiency level of the



students. The students with the highest language proficiency scores did not exhibit the same cognitive strategies and those with the lowest language proficiency scores did not exhibit the same cognitive strategies either. The only similarity observed was that the student with the highest language proficiency score (Bora, 83.5) used the strategy of Evaluation ( $\bar{M} = 3.5$ ) almost as frequently as the student with the lowest proficiency score. This can be related to the fact that the best student was more concerned with producing an error-free text. As for the student with the lowest proficiency level, she was not quite sure whether her own choice of words or expressions were appropriate and this may have accounted for why she used the strategy of Evaluation so frequently.

The strategy of Evaluation, which was used to judge appropriateness of structures, was not necessarily used at the end of the task. The students evaluated each of their sentences as they combined them. As was mentioned before, the two students who used the strategy of evaluation most frequently were the students with the lowest and the highest language proficiency scores. This can be attributed to the insecurity of the student with the lowest proficiency score in completing the task and for the student with the highest proficiency score, to his keen interest in producing an accurate text.

Hence, it was illustrated that language proficiency did not affect the process of writing of these students. The students with lower language proficiency levels did

not have any difficulty in completing the task. Although the two subjects with lower proficiency levels had difficulty in understanding some of the words in the task, this did not stop them. They completed their task constructing meaning with the help of other expressions in the sentences. Since the task was clear to them, they did not hesitate to use the given sentences. These findings suggest that differences in language proficiency do not appear to entail changes in the thinking process or decision-making behaviour used for writing.

Finally, the study investigated the relationship between the cognitive strategies of ESL students studying at an American university (Johnson, 1992) and EFL students studying at an English-medium university in Turkey. The findings showed that almost the same results were found in the strategies used by ESL students in Johnson's (1992) sentence-combining tasks. Students in Johnson's study most frequently engaged in the strategies of Restating Content, Constructing Meaning, and Planning. The only difference was that planning did not receive the highest attention in their processes in sentence-combining tasks, whereas it did in the present study.

Similar results found in Johnson's (1992) study and the present study illustrate that ESL and EFL writers refer to the same type of cognitive strategies in a similar task given to them. Moreover, because these strategies are very close to the strategies used in free writing (Swarts, Flower, & Hayes, 1984), sentence-combining exercises do have a place in teaching of

writing to familiarize students with the cognitive skills of organizing and with the notions of subordination, cohesion, and structural aspects of the target language (Kameen, 1978). Therefore, the place of sentence-combining should not only be for teaching grammar or practicing with cohesive devices (Strong, 1986). It should be used for practicing writing skills. Strong (1990) arguing about the place of sentence-combining as a technique in the teaching of writing states that "since writing is thinking, more planning should lead to better writing" (p. 5). This could be made possible with more practice in sentence-combining in the classrooms. It is believed that with more research, sentence-combining will take its proper place in the teaching of writing.

#### Limitations

With a small sample size, the implications of the findings in this case study are limited. Furthermore, although some students seemed to be capable of carrying out the think-aloud procedures very well, some had to be prompted to speak up frequently. This might have affected and divided their focus on the strategies they were engaged in. Thus, further research with more subjects will likely shed more light on the cognitive strategies used by EFL students during sentence-combining tasks, which will help teachers to use this technique more effectively to teach writing skills.

### Conclusion

Due to the small number of studies carried out with EFL students and also to the small sample size factor of case studies, further research is needed with larger samples representing a wider range of English language proficiency levels. The researcher also suggests that it would be more enlightening to evaluate the final products of the subjects in the case studies side-by-side with their think-aloud protocols because each mark or note on students' written product helps the researcher to transcribe and code communicative units properly. As sentence-combining is accepted as a powerful technique in the field of teaching writing by some researchers (Mellon, 1979), more research is needed which would illustrate the degree and the place of sentence-combining in teaching writing. In other words, teachers should be helped with research results in deciding how much sentence-combining and where in the composing process it can be most effectively taught.

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## Appendix A

Background Questionnaire

**Please fill in the form:**

- 1.1. Name : \_\_\_\_\_  
 1.2. Date of Birth : \_\_\_\_\_  
 1.3. Address : \_\_\_\_\_  
 1.4. Telephone no : \_\_\_\_\_  
 1.5. Faculty : \_\_\_\_\_  
 1.6. Department : \_\_\_\_\_  
 1.7. Gender : Male: \_\_\_\_\_ / Female: \_\_\_\_\_

**Please check ( ) the appropriate space:**

- 2.0. What year are you in at METU?  
 First: \_\_\_\_\_ / Second: \_\_\_\_\_ / Third: \_\_\_\_\_ / Fourth: \_\_\_\_\_
- 3.0. How long have you studied English?  
 \_\_\_\_\_ months \_\_\_\_\_ years
- 4.0. Do you speak any other foreign languages?  
 YES: \_\_\_\_\_ / NO: \_\_\_\_\_
- 4.1. If yes, which language? \_\_\_\_\_
- 5.0. Outside of your major field do you frequently read  
 in English: \_\_\_\_\_ in Turkish: \_\_\_\_\_  
 (e.g., popular magazines, newspapers, novels)
- 6.0. Which of the skills in English do you find the most difficult?
- Reading comprehension : \_\_\_\_\_  
 Listening comprehension : \_\_\_\_\_  
 Speaking : \_\_\_\_\_  
 Writing : \_\_\_\_\_
- (Please number them from 1 (the most difficult) to 4 (the least difficult)).

Appendix B  
Informed Consent Form

By way of introduction, my name is Şükran Özoğlu and I am a student in the Master's of Arts in the Teaching of English as a Foreign Language Program at Bilkent University in Ankara. I am doing a research on the cognitive strategies of EFL university students during sentence-combining exercises and, therefore I am asking you to provide me with the following information. This information will help me as well as other teachers to prepare instructional materials that will better meet the needs of our students.

Let me assure you that any information given to me is confidential. None of it will be released in any way that will permit the identification of individuals who participate. Cooperation is, of course, voluntary and you can withdraw from the study at any time. However, I hope you will seriously consider taking part in this study.

If you have any questions, please call the MA TEFL Program at Bilkent University in Ankara,  
(312) 266-4040 ext. 1561.

Sincerely,  
Şükran Özoğlu

## Appendix C

Sentence Combining Exercises

## Topic 1.

I. Write a coherent and unified paragraph using and combining any pairs of the following sentences. You can also use any connectors and transitional expressions you want.

Riding a bicycle is preferable to driving a car.

A bicycle costs only a hundred dollars or so.

A car may cost thousands of dollars.

A bicycle's maintenance cost is very small.

A car's maintenance is costly.

Biking is healthy.

A biker gets physical exercise cycling.

A biker enjoys the scenery.

A biker becomes a part of nature.

Bicycles are nonpolluting.

A car is polluting.

Topic 2.

I. Write a coherent and unified paragraph using and combining any pairs of the following sentences. You can also use any connectors and transitional expressions you want.

Sound must have some material to pass through.

It cannot travel through a vacuum.

Sound can travel through a variety of materials.

It travels at different speeds through different mediums.

Sound travels through dry air at about 700 miles an hour.

This is about the speed of a bullet fired from a rifle.

Sound goes about 2800 miles an hour through water.

It moves faster than this through the ground.

Sound goes quite rapidly through the ground.

It travels faster through solids and liquids.

## Appendix D

Think-Aloud Protocols

Cem  
Topic 1

Let me read first...(reads)...he is comparing these two...is it going to be one paragraph?...First one topic sentence...I can write the first sentence as it is...(reads out as he writes)...they are compared financially...can I add a sentence here?... (writes)...I can connect these two with a connector (writes)...I don't know the meaning of this word 'maintenance' but I can connect these two...yes.I don't know the word but I can use them together...(reads)...I need to have a transition here...I will put these three sentences together in one sentence...I have to connect these two to the others somehow... 'moreover'.. (reads as he writes).finished but let me read all (reads).

(it took ten minutes for him to complete this task)

Topic 2.

(reads)... this is a bit more difficult than the other...(reads again)...to write an introduction sentence to this is necessary too. I think ...the first sentence sounds like a sentence falling out of a sky suddenly. (reads)... well. it is not really like that...it is a starting point for the others.. but the question is to start or not to start the topic directly this way... we are not used to starting directly...(reads)...but (reads) ...I may not need to add another sentence... I can say studies up to now have shown that...maybe I can say

observations or research...the research... for research  
can we use 'carry out'?... can I write it down without a  
clause... no.it may be mixed up. it is better to use a  
relative clause.(writes)... can I add something else  
here?. because I know this topic from school.I can write  
my own sentences...(reads)...oh! it is given here.  
everything is given here.(reads)... so it will be enough  
to connect all these.(writes)...that's it.I think I need  
a connector here...there is a contrast here... I may  
put these together with 'although'.but is it necessary?  
...I can write the next sentence directly...(reads)...  
actually I made a mistake at the beginning I think.by  
putting 'however' because the important thing here to  
discuss 'different mediums and different speeds'...let  
me see if I can save this...(reads)...I used 'however'  
but I need to use it again ... but maybe I can add  
'although'.I need to find another connector...can I use  
'yet'?...all mixed up.(reads) ...what can I do?...I will  
cross this out.(crosses out)... OK I can write  
'although' (writes)...There are other comparisons...I  
can use examples now...I used 'travels' too much..I have  
to change it...now we have joined these...a sentence for  
conclusion...I can say 'consequently' or can I say 'to  
conclude'?... OK to conclude...does it mean the same  
thing?. I can say 'to sum up'.. 'to conclude' is the  
best (writes). Now let me read.(reads)  
(This topic took him 20 minutes)

Erin

Topic 1

I need to read all...I have to read again (reads)  
... I need to make a plan.(reads)...There are good and  
bad sides. I will have to put them together accordingly  
...now I will put them into groups... (reads)...these  
are all given.there is nothing else to add...The first  
sentence is good to start (writes)...now there is a need  
for a connector surely... to connect these two  
'although' is good. because one is bicycle the other is  
a car...(reads out as she writes )...for same kind of  
comparison I need another connector... 'unlike car's  
maintenance'...(reads out as she writes)... I'm not sure  
is it 'a' or 'the'. I'm always confused...oh! I think I  
made a mistake..because is it neccessary to separate  
'costs' and 'maintenance'(reads)... no it can be  
correct... as I write I always need to go back to read  
again and again..(reads)... now since a bicycle's good  
sides are discussed I need to put something... but I can  
not find the connector I want to use...these short  
sentences can be monotonous...if I join two positive  
sides it can be better...but I can not find a connector  
...I'll write 'biking is healthy because' (writes)...  
now how should I connect the other two?...I need to use  
a different connector...I can maybe use 'while'..  
(writes)...now since I'm going to write the last two  
sentences I have to show that it is the end...I used  
'unlike' before. I have to use something else...I cannot  
think of any connectors...I can use 'whereas'...oh I've



made the same mistake. because I started writing before reading all... when do this I can not find a good connector later... I need to make a good plan first and decide what I can use...(reads)...I don't want to use simple connectors...now I need to write a conclusion sentence...I can not say 'to conclude' because I'm not concluding anything... the last sentence should be good to sum up...I'll read the above sentence because I need to write something like this..(reads)...I can think of a good sentence in Turkish but I can not think of something in English...I can not put it into English ...can I use 'compare' to make a comparison? ...yes. maybe I can use 'to conclude'...(writes)... is it 'the' or 'a' with the bicycle?... OK. finished...

(This took her 15 minutes)

## Topic 2

Now I need to read to concentrate...(reads)...I need to read again...(reads)....first I must understand what kind of paragraph this is because I'm going to write it accordingly...(reads)... now I need to read again to group them...(reads)...the first two sentences are good. I'm going write them down as they are...(writes)... since it is the same subject there is no need to join these with a connector. I can say 'it' here... to be able to write the next sentence I need to read two or three sentences together...(reads)...now for these four sentences there is no need to use a connector because these one by one show the facts.. the others following are examples...or maybe I can connect them with

'and'...(writes). and here I can use but...(reads out as she writes)...can it be' but'?...I can not make out what to write next...yes. I can write 'just'...(writes)...now another example is coming that's why I need to read the one I wrote before.(reads)... maybe I can join these with 'which' or 'although'...I'll read the last two sentences.(reads)...these two sentences seem alike..I can either connect them somehow. or I can leave the first as it is.(reads)...do I have to use all the sentences?... this sentence is not necessary. because it is the same with the other...I'm not going to take it... for the last sentence. I need to read all.(reads)...I can start the last sentence with 'to conclude'... but since I'm coming down from the examples. then I can say 'to conclude' or ' to sum up'...(writes)... finished.  
(This task also took her 15 minutes)

Sevgi.

Topic 1

(Reads)...hmm.. he is comparing the bicycle with cars...let me see.(reads)...I will try to write about the bicycle I think...first we will criticize the cars. because their bad sides are given... I can tell why I choose the bicycle...(reads)...now I'm thinking of a sentence.if I were not given the topic. if these did not exist what would I say at the beginning...(reads)...now do I try to choose from these?...(reads)... (starts writing)...I can not spell 'bicycle'. let me check...now I will try to find something that would match this sentence...hmm!... do I have to use all these

sentence?...what do I do next?. (The task was explained to her again)...OK...let me see if I can keep my first sentence... no... (crosses out)... now I can join these two with 'where'... or is it 'whereas'?...again he is talking about 'costs'...hmm...(reads as she writes) I can add this sentence here... hmm... smaller than a 'car's maintenance'...now... hmm...he is analyzing from another point of view...(reads)'biking is healthy'... (writes)...do I need to write another paragraph?...I will talk about the bicycle's different characteristics...I used 'even' once now I have to find something else...OK... I can say 'biking is healthy' now I will try to put these three sentences about the bicycle together...all are the things happening at the same time...hmm...I will try to make the three only one sentence...(reads out as she writes)... I can connect these two as they are...hmm...I can use 'biker' once. ..now a bicycle... how can I put the last sentence?... can I say bicycles are not polluting the nature like the cars?... no. there is 'nature' in the above sentence.. (reads)...no. it can stay like this...Let me go back ...hmm... I will change this. 'the maintenance of a car' is better...now there is no need for this last sentence ..(crosses out)... (reads as she writes)'a biker is a part of nature and never pollutes the'... I crossed out the last sentence. OK... finished.

(It took her 25 minutes to complete this task)

## Topic 2

(reads)...what does 'sound' mean?...there are words that I don't know...(reads)...I mix everything up I will read again...(reads)...I don't understand some of them ...I will try to group them...(reads )... how can I start?...(reads)...I'd better start with the first sentence...(writes)..actually I couldn't understand this first sentence much...I can put the second and the third sentence together.(writes)...'but' I will write down the fourth sentence as it is (writes)... (reads)...there is an example.. let me read again.(reads)...hmm...I can put these two together somewhat like comparing.but. I will not use the sentence in the middle...(reads out as she writes)'sound travels. whereas it goes about...OK?...no. this is not good. let me put 'but' here.(crosses out)..(reads)'but it can go about'...there is another example here. but both are not the same... hmm... (reads) however it moves faster than these'...the other is almost the same as these...now as a conclusion..now the last sentences...(reads)...I can say 'as you can see'... and put the last sentences...(reads again)... this first sentence ha?... now I understand it...I just write I just tried to group them  
(This task took her about 20 minutes)

Bora

## Topic 1

(reads)...now what shall I do?... shall I choose the sentences?...let me read (reads)...here he is comparing two things.'riding a bicycle' and... there are

'pros' and 'cons'. these two are written one after the other ... or ah!...there aro two 'pros' and they sound like the same...no. they are not 'pros'. but advantages ...but he prefers the bicycle I will group them...

(reads)...shall I only use transitional words or can I add my own sentences?...I'm thinking about how to start ... should I say 'riding a bicycle and go on? or... how about adding a new sentence. like a topic sentence?

...well. I should probably start with the first sentence I can turn it into a topic sentence ... let me read the first sentence again.(reads)...I have to find a connector...'with respect to'?... or some other one... first 'money and maintenance cost' ... hmm! then 'the physical exercise'.. can I say in many ways?... I can start now is it 'ways'. 'aspect'. 'respect'?... I'm not sure about it... OK..'in many ways'(reads as he writes) ... now transition. I have to find a transition...I can join this 'money side' OK. now the others... here again I have to use a transition before 'maintenance cost'... I used 'but' in the above sentence. here I can maybe use 'whereas'. or 'while'...since here again we are writing about the bicycle. I can start with 'furthermore'

(writes)...now the others... (reads)... in fact there are two things here. the 'pollution' fact is put at the end I can use it here. two are compared but...there are four things advantages of a bicycle are given...I can use all these at the end...Here again I need another transition...I don't want to use the same kind of transitions because this way I will be using the same

patterns...it can be done but...OK I can say another...another advantage.. or another credit...but at the same time I'm going to talk about a car...OK (reads out as he writes)'unlike a car'...four things are here. two are related 'physical exercise' and 'health'. I can write these in the same way. and there is 'enjoys the scenery' and also 'a part of the nature'. these are alike and can be connected. I can use 'healthy' as a result of the other first... and I can connect the others with 'and'(reads as he writes) 'A biker enjoys the scenery and'...for the conclusion I will use 'finally'.. but I have to go back and read first... (reads)...my last sentence is too sudden...I have to blend it into the other...another transition word maybe ...or I can use something more smoothly...should I start with the advantages first?...this and this are advantages...or some other way...(reads)...I can change them into noun forms. but it does not sound nice... I can combine these two with one verb. I can use 'also' ...I'll go back...actually I can use 'also' at the beginning. OK... I will finish now...'finally'... (writes) Yes.. this is good. That's all... (It took him to complete the task 10 minutes)

## Topic 2

(reads)... here he has given the characteristics of 'sound'...and these characteristics are related to its speed.he is comparing the speeds during its travel through..'liquid' 'solid' 'ground'...(reads)...this is related to one characteristics of 'sound'...now there

should be some kind of an introduction... well... first he says 'sound must have some material to pass through' ...Let me read again.(reads)... I have to decide where to start... should I start with?... I have to find an introduction sentence. it is a bit confusing...the first sentence can be turned into a topic sentence... but it starts all of a sudden...the first two sentences are related to each other. I will combine them somehow in the first sentence.so the third sentence can come later...I can make a generalization. would it be all right?...I think it is too general that is now from general to specific...(reads)... It is very general.but I can come back after this. it is explained more.. (reads)'variety of materials'... he is talking about a number of materials that is. too many materials... something like 'moreover' can be necessary.(reads again)... what can I use?...now I can write the first two sentences together. I don't need to combine them with a transition. I can just write together (reads) 'different speeds' through different materials. there is a word that I can use... I know the word...(writes)... I can change it later...now I can compare the speeds (reads sentences aloud)...let's start.now since I will find different examples if I join them with 'first' 'then'and so on. OK...these two sentences can be combined...(writes)...and the second thing comes.. (reads)...the last sentence can be related to these comparisons.or.I can come to a conclusion.these sentences are short. it is not good to write

transitionas for each... OK.. I can make a comparison in one sentence...but. there is a problem. it says 'sound travels through the ground rapidly'(reads)...can I throw a sentence out?.OK then ... This is not necessary I can add a good part to this last sentence...there is something missing in the topic sentence too.(reads)...now I've noticed... should I add something else saying 'third' down here?... because there are more than two things.maybe I can use 'whereas' putting it into the sentence.anyway.let me put down the last sentence. (writes)...I've written my last sentence but..it looks like a bit the others..it is difficult to be limited to these sentences.I don't like this... it is a bit strange ...maybe I can add something here...'which' (reads as he writes)...now I must correct my topic sentence. (reads)...I can remove 'so' comma may be... (reads)... OK... all done... (It took him about 20 minutes.)

Alp

Topic 1

(reads)...are we going to add something from outside?.(reads)...here he is comparing it with a car...I can take the first sentence and then.we can write why it is preferable...then we have to talk about the reasons...to be able to show why we can say it is cheaper... it will be better to start with 'first' (writes)... and now.. the second...I can use 'whereas' here...later maybe...I used 'first' and 'second' now maybe I can go on saying 'third'.I can give the reasons (writes)...I will be talking about the positive sides of



a bicycle..now I can say 'third'..(reads as he writes)  
 'biking is healthy' because...'physical exercise' enjoys  
 the scenery' and 'part of a nature' can come here...  
 These are about a hobby..(reads)...let me put the  
 'physical exercise' only after this I can use 'besides'  
 or moreover'..should we keep the order here?..then would  
 it be better if we used 'the pollution' effect?...I am  
 not sure...the first and the second sentences are  
 comparing it with the car.. and then a positive side...  
 OK then I will cross this out. and write again..(crosses  
 out)...now (reads as he writes)'in contrast to a car'...  
 now maybe using 'moreover' would be better...I can add  
 other positive points..(writes)...the last two sentences  
 can be put together as a conclusion. OK..(reads as he  
 writes)'in conclusion' ...let me read the last sentence  
 (reads)...do we need to write a title?... O.K. done.  
 ( It took him 15 minutes).

## Topic 2

(reads)...this is a bit more complicated...(reads  
 again)...first I have to find the related sentences...  
 and there are some negative sentences..(reads)...what  
 are related to each other?...it will be easier if I put  
 them in an order..for example the first sentence can be  
 the starting sentence... how do I write the first  
 sentence?...where can I use the second one?...for example to  
 start I can say 'sound must have some materials to pass  
 through' because 'it can not travel through a vacuum'  
 (reads)... but how would I put the others?...the other  
 sentences are related to its speed...so after the first

part I can deal with them...now the first or the third sentence is better to start?...OK. may be I can throw out the first sentence.because it is like the third sentence...(reads)... OK. then I'm starting with the third sentence..may be I can start with (reads as he writes)'although sound can travel trough...or I can say 'sound can travel through'...(writes)... a transitional word to use...I think I can use 'moreover'. (writes)... now after the 'mediums' I can give the examples.'for example'(writes)...I can mention about the others...can I add something else here?...but here 'sound travels rapidly through the ground' is an unnecessary sentence I've already said this at the beginning.. I can talk about water and air...(reads)...now I can say 'it travels faster through solids and liquids'. what after this?...should I write about only dry air. air ah?... (reads)... I'm thinking about how to start the second part...(reads)...I changed my mind. first I will give the dry air example.(writes). 'for example 'it travels through dry air'(reads as he writes)...I can put the example here.(writes)...then I can go to the next with 'however'.(writes)...there is another example about the liquid..(reads)...again I can combine the water and ground examples..yes.. I can write these two together (writes)...what can I do with this sentence?...now the last sentence.. how to connect this to the others (reads)...can I combine this sentence with the other?..(reads)...can I use 'besides' or something like that?...OK...I have to use this (reads)'it moves faster

through the ground' as the final sentence maybe... now after 'water' what connector should I use?...OK.. 'but'.  
 (reads and crosses out something)...let me read again...  
 I can add these to the conclusion.(writes)...all done.  
 (It took him 20 minutes)

Arzu

Topic 1.

Let me read first.(reads)...now I will make a comparison in the introduction..I will compare riding a bicycle and driving a car but how can I make more general?...(reads)...there are advantages...I will make a comparison using their costs...I can say (writes) 'first of all'.. I can put these two together...another comparison.(writes)...what does 'costly' means?...this must be another comparison point. I can use it anyway. I can change the first sentence and keep the other as it is...and combine them with 'but'...I can start with 'people'...there is no comparison here.. I can talk about the 'biking' here... first I can say ' car is polluting' then I can compare in the conclusion I will write as an advantage again... I have to put them in an order...I have to start with 'healthy' then its results (writes)...but I can not combine them (reads)...I don't want to take the sentences as they are but...because... I can go on now..(reads as she writes)'a biker gets'... I will complete this part with 'moreover'..(reads as she writes)'a biker enjoys...' OK...and I joined these two sentences...now there is a comparison. to be able to compare I have to find a connector...(reads)...

(writes)...I can use 'finally'...I have to talk about its contributions to the environment before I compare ...~~(crosses out)~~...I'm thinking about the words...I can not find the words I want to use...I want to emphasize the effects of the bicycle a bit more...I will use 'people' again. I used it before... what does 'contribution' means in English?...I couldn't find a good word.'effect' maybe I can use 'effect'... no. this sentence is not correct..~~(crosses out )~~...now I can write down the last two sentences... no.I can not write 'don't pollute'...I'd better combine these two ~~(crosses out)~~...OK. I can write 'but' no. ~~(crosses out)~~... yes. maybe I can use it...(reads)... but I don't want to use 'effect' I can say 'not harmful'...(reads)...I started with 'first of all' but there are other things that I put 'so' I must say 'furthermore'... here I can say 'moreover'...now a title...(writes)...I can say 'advantages of a bicycle' because we talk more about a bicycle. OK... (It took her 25 minutes)

## Topic 2

(reads)...this is more difficult.(reads)... can I use my dictionary?... now I must write a topic sentence...I can take the first sentence and something else from the other sentences... (reads) ... (starts writing)...I wrote that 'it travelled at a different speed through different materials'... no..I will start with the second sentence... (writes)...now I want to combine the second sentence with the other..(reads)

...the following are examples for this sentence so I will try to connect them. I will write as they are (writes)... I will start with 'for example'...(writes)... I took the same sentence..since they are related 'which' can be used...the next sentence is also an example...how do I continue?...should I say that it is example. or just write...OK. I will just write as it is (writes)... (reads)...the last two sentences are alike. I can take one...now the last sentence. I need to conclude... I want to use a different sentence...It says (reads)... 'travels faster through solids and liquids'. what is it actually compared with?...I can start the last sentence saying 'we can conclude that'. and make the comparison OK...(writes)...now finished...(reads)... but I must go back to the beginning (reads)... I think my topic sentence is not good..(reads again)...my second sentence sounds better. more like a topic sentence.(crosses out)...I can combine the first second and third sentences...(writes)...now I can talk about the different speeds...OK...that is it...I don't want to use the same word over and over... now a topic sentence...I can say 'speed of sound'...(writes)...this was more difficult but there were good examples so I found it easier to write ( It took her 20 minutes.)